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Applicant(s) : Jacek KRUSZYNSKI, et al
For : SOLID DRILL BIT FOR MACHINE TOOLS

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ENGLISH LANGUAGE TRANSLATION OF ANNEXES
TO THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT
UNDER PCT ARTICLE 36

Sir:

Attached is the English Language Translation of Annexes
to the International Preliminary Examination Report
under PCT Article 36.

Respectfully submitted,


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Encl: English Language Translation of Annexes to IPER

Patent claims

1. A drilling tool for machine tools, having a drill bit body (10) and at least two inserts (20, 22) which are arranged at a radial distance from one another in an insert seat (16, 18) of the drill bit body (10) in the region of a chip flute (12, 14), project with their front-end main cutting edges (30, 34) axially beyond the drill bit body (10) and radially overlap one another in their active regions, the radially outer insert (22), with its outer insert corner (36) and its adjoining secondary cutting edge (38), projecting beyond the drill bit body (10), and the secondary cutting edge (38), starting from the insert corner (36), being inclined at a defined setting angle (α_a) in its longitudinal extent in the direction of the drill bit body, characterized in that the front-end main cutting edge (34) of the outer insert (22) is subdivided in its longitudinal extent into a radially inner working section (50) and a peeling section (52) adjoining said working section (50) on the outside and extending up to the outer insert corner (36), said sections (50, 52) enclosing an angle of 95° to 120° with one another.

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2. The drilling tool as claimed in claim 1, characterized in that the working section (50) of the main cutting edge (34), toward the peeling section (52), is set at a positive setting angle of 2° to 10° relative to the end face of the drill bit body.

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3. The drilling tool as claimed in claim 1 or 2, characterized in that the peeling section (52) of the main cutting edge (34), toward the outer insert corner, is set at a positive setting angle of 72° to 87° relative to the end face of the drill bit body (10).

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4. The drilling tool as claimed in one of claims 1 to 3, characterized in that the transition point (54) between working section (50) and peeling section (52) of the main cutting edge (34) is rounded off convexly.

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5. The drilling tool as claimed in one of claims 1 to 4, characterized in that, in the region of the outer insert corner (36), the peeling section (52) of the main cutting edge (34) and the adjacent secondary cutting edge (38) enclose an angle of 160° to 175° with one another.

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6. The drilling tool as claimed in one of claims 1 to 5, characterized in that a central section (58) extending up to the inner insert corner (56) adjoins the rectilinear working section (50) of the front-end main cutting edge (34) radially on the inside, this central section (58) enclosing a sweepback angle of 160° to 175° with the working section (50) and being set at a negative setting angle of 3° to 18° relative to the end face of the drill bit body (10).

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7. The solid drill bit as claimed in claim 6, characterized in that the active region of the central section (58) of the front-end main cutting edge (34) of the outer insert (22) is overlapped by the front-end main cutting edge (30) of the inner insert (20) and is rendered ineffective.

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8. The solid drill as claimed in one of claims 1 to 7, characterized in that the inserts (20, 22) are designed as indexable inserts having four main cutting edges (30, 34) of the same length.

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9. An insert for a drilling tool which can be used in a machine tool, having at least one main cutting edge (30, 34), extending between a first and a second insert corner (36, 56), and a secondary cutting edge (38) adjoining the first insert corner (36), characterized

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in that the main cutting edge (30, 34) is subdivided in its longitudinal extent into a rectilinear working section (50) and an adjoining rectilinear peeling section (52) extending up to the first insert corner (36), said sections (50, 52) enclosing an angle of 95° to 120° with one another.

10. The insert as claimed in claim 9, characterized in that the transition point between the working section (50) and the peeling section (52) of the main cutting edge (30, 34) is rounded off convexly.

11. The insert as claimed in claim 9 or 10, characterized in that, in the region of the first insert corner (36), the peeling section (52) of the main cutting edge (30, 34) and the adjacent secondary cutting edge (38) enclose an angle of 160° to 175° with one another.

12. The insert as claimed in one of claims 9 to 11, characterized in that a central section (58) extending up to the second insert corner (56) adjoins the rectilinear working section (50) of the main cutting edge (30, 34), this central section (58) enclosing a sweepback angle of 160° to 175° with the working section (50).

13. The insert as claimed in one of claims 9 to 12, characterized in that it is designed as an indexable insert (20, 22) having four insert corners (36) and four identical main cutting edges (30, 34) which are offset from one another by 90° and of which in each case the main cutting edge (30, 34) adjoining a first insert corner (36) at the same time performs the function of the secondary cutting edge (38) with regard to the adjacent main cutting edge (30, 34) via the relevant insert corner (36).